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To ensure effective communication with everyone, additional services can be made by calling EPA's toll-free number **1-800-424-4372**

Web Surfing for EPA Region 10:
Check out our homepage at:
http://www.epa.gov/r10earth

For information on EPA's ozone protection program check out:
http://www.epa.gov/ozone

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Questions Inspectors and Brokers May Have About Ozone Depleting Substances

(such as Chlorofluorocarbons)

Why are Ozone Depleting Substances (ODSs) a Concern?

The ozone layer is approximately 15-35 kilometers above the earth and acts as a filter to protect all life forms from overexposure to the sun's harmful ultraviolet rays (UV). Depletion of the ozone layer results in more UV radiation reaching the earth, which is causing an increased risk of sunburn, skin cancer, cataracts, immune system suppression, and long-term effects on the food chain.

What are the Ozone Depleting Chemicals?

Several classes of chemicals have the potential to deplete the ozone layer, including:

chlorofluorocarbons (CFCs)
hydrochlorofluorocarbons (HCFCs)
carbon tetrachloride/tetrachloromethane
methyl chloroform/1,1,1-trichlorethane
halons
hydrobromofluorocarbons (HBFCs)
methyl bromide

CFCs are the most extensively used of all the ODSs, and the most often illegally imported/exported. The most common CFC is Freon-12 or R-12 (or dichlorodifluoromethane) and HCFC-22 is the most commonly used HCFC. *TIP: the chemical name usually contains chloro- fluoro- or bromo- and usually ends with -propane, -methane, -ethane, or -carbon.*

Trade names often appear with the following numbers attached: -11, -12, -113, -114, -115, -500, -501, -502, etc. Some products may contain blends of CFCs, HCFCs and HFCs and bear different numbering systems. While not an exhaustive list, some common trade names include Freon, Frigen, Genetron, Serecon, Genesolv, Racon, Isotron, Forane, or Isotrol.

ODSs have specific applications. Knowing the applications outlined in the chart below can help you know which industry sectors potentially use ODSs.

What controls are placed on these substances?

In 1987, Canada, the United States, and many other countries agreed to protect the ozone layer and signed the Montreal Protocol, an international treaty. Both Canada and the U.S. regulate the export, import, manufacture, sale, and use of ODSs.

Import or export of any ODS (whether virgin, recovered, recycled, reclaimed, or used) must be authorized in writing by U.S. EPA or Environment Canada.

Why would someone smuggle ODSs and CFCs across the border or transport them illegally?

A 30-pound cylinder of Freon-12 can be purchased in Canada for about $180 (US) and sold in the United States for about $450. Prices can be even higher if the material is sold in the southern United States. Illegal trade of CFCs in the United States is second only to drugs.

CFCs can be smuggled by anyone, but are most often smuggled by people who are very aware of the price difference and shortage. Therefore, pay particular attention to people who are mechanics, air conditioning specialists, old car buffs, car racers, do-it-yourself home owners /car owners. During a primary inspection, remember to ask what the person does for a living and what the substance is being used for.

When do CFC violations occur most frequently?

Since CFCs are used in air conditioning and refrigeration systems, the demand for these substances increases as the weather becomes warmer. Violations occur most frequently in the summer months, starting in April; however, these substances are in demand all year long in the southern United States.

ODS	Application
CFCs	refrigeration, air conditioning, solvent, aerosol, foam blowing agent, sterilant
HCFCs	replacement for CFCs, mostly for refrigeration, air conditioning, and foam blowing
Carbon Tetrachloride	solvent, used in electronics industry and to make other chemicals
Methyl Chloroform	solvent
Halons/HBFCs	fire fighting agents
Methyl Bromide	pesticide

How are CFCs smuggled or transported? What should I look for?

CFC-12 may be shipped in 12-ounce pressurized cans and cylinders ranging in size from 30-pounds to 40,000-pounds.

CFCs are often smuggled using "classic smuggling methods", both in commercial shipments and private conveyances. These classic methods include:

- Hiding CFCs in other cargo, disguised as non-regulated substances (e.g., propane cylinders).
- Hiding CFC cylinders inside a larger cylinder of another gas.
- Mislabeling individual containers.
- Double layering, with CFCs hidden behind the material listed on the manifest.
- Invalid manifests; cargo is different than that listed on the manifest.
- Concealing small quantities in cars, trucks or RVs.

Other methods of smuggling CFCs include:

- Importing virgin material and claiming that it is used or recycled.
- Diversion of CFCs designated for transshipment.
- Diversion of CFCs produced for legal export.

What safety issues should I be concerned about?

With the exception of CFC-11, -113 and -114, which are normally transported in drums as liquids, all other commercial CFCs are generally compressed gases. Most CFCs are transported/shipped in cylinders that are specially designed to accommodate the pressures associated with compressed gases. There are regulations governing the manufacture, testing, filling, and shipment of compressed containers.

Who should inspectors notify when violations are found?

Contact the Environmental Protection Agency, Region 10, at (206) 553-2597 or toll free at (800) 424-4372, extension 2597.